

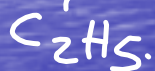
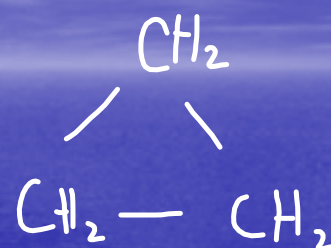
Cycloalkanes

"cyclic or ring" alkanes

Naming: use the prefix cyclo in front of the alkane parent chain name.



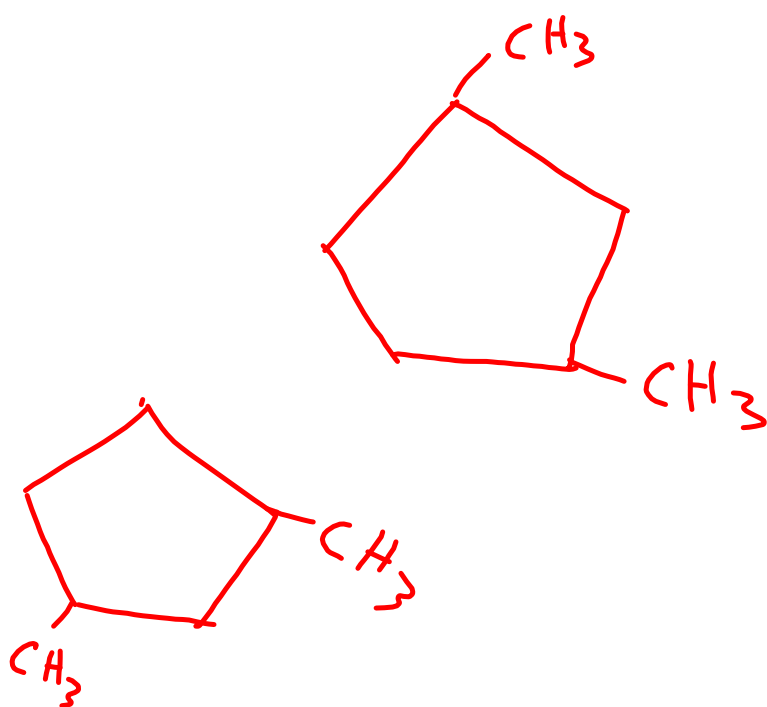
cyclopropane



cyclobutane

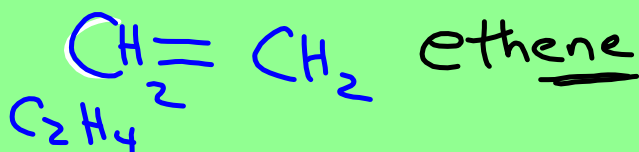


Draw the structure for
1,3-dimethylcyclopentane



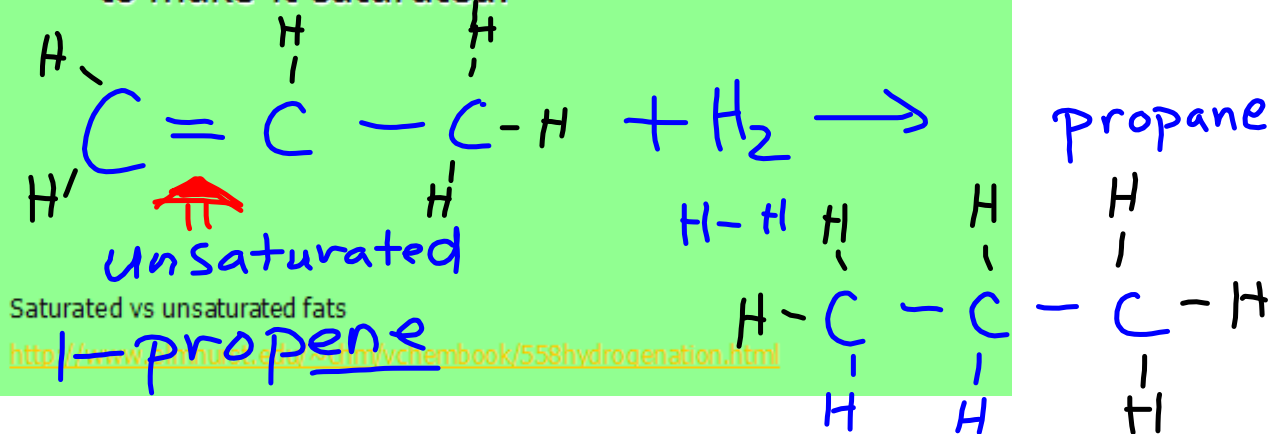
Alkenes-(aka olefins) C_nH_{2n}

- UNSATURATED hydrocarbons that contain at least one **double bond**.
- Since they have one or more double bonds, they react easily and quickly with hydrogen or a halogen like bromine. (alkanes react very slowly with bromine)
- Naming an alkene is similar to an alkane with two exceptions: ➡ the location of the double bond must be given and ➡ the parent chain must contain the double bond



Hydrogenation

- A reaction that involves adding enough hydrogen to an unsaturated hydrocarbon to make it saturated.



<http://www.elmhurst.edu/~chm/vchembook/558hydrogenation.html>

FAST

SATURATED

Hydrogenation of Oils

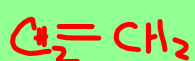
- When hydrogen adds to the double bonds in vegetable oils, the products are solids at room temperature.



Textbook: General, Organic, and Biological Chemistry. Copyright © Pearson Education, Inc., publishing as Benjamin Cummings.

Alkynes- $C_n H_n$

- UNSATURATED hydrocarbons that contain at least one **triple bond**
- Like alkenes, they react quickly with bromine
- Naming: they are named the same way that alkenes are named with the location of the triple bond being indicated by a number.



ethene

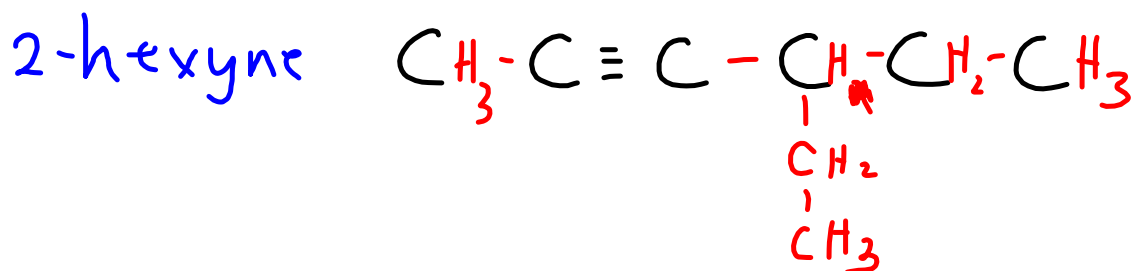


ethyne

ane
ene
yne

Naming alkenes and alkynes

- The parent chain must contain the multiple bond.
- The chain must be numbered from the end closest to the multiple bond.....this means that multiple bonds "take precedence over alkyl groups"
- A number is put in front of the parent chain name to show the location of the multiple bond.



4-ethyl-2-hexyne